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ABSTRACT

The report reviews competency tests designed to evaluate inservice and prospective teachers. The most frequently used instrument is the National Teacher Examination (NTE). It is designed to measure academic preparation in four domains: communication skills, general education, professional education, and subject field specialization, and should be used, if at all, only as one part of the initial teacher selection process. The Dallas Independent School District has found that the Wesman Personnel Classification Test, a measure of verbal and quantitative ability, is at least as good a predictor of rated teaching effectiveness as the NTE. Other factors which a school district must consider in planning a testing requirement are legal issues, minorities' scores, and state requirements for teacher certification. The Teacher Perceiver, a structured interview, and psychological testing have been considered as posible components of the teacher selection process. It is concluded that no single method of teacher selection is a panacea. All sources of information have some merit in the selection process. However, no single source should be relied upon to the exclusion of others. (DWH)

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NO PANACEAS: A BRIEF DISCUSSION OF TEACHER SELECTION INSTRUMENTS

March 1984

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OFFICE OF RESEARCH AND EVALUATION
AUSTIN INDEPENDENT SCHOOL DISTRICT

NO PANACEAS: A BRIEF DISCUSSION OF TEACHER SELECTION INSTRUMENTS

March 1984

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NO PANACEAS: A BRIEF DISCUSSION OF TEACHER SELECTION INSTRUMENTS

Summary

The widespread perceptions that public schools are doing a poor job and that many teachers are themselves deficient in basic academic skills have caused many states and localities to turn to competency tests to evaluate their teachers and/or applicants. Currently, 30 states require or have set a date to require applicants for teacher certification to be tested for competency in some combination of basic skills, subject matter knowledge, or pedagogical knowledge.

The test battery in widest use nationwide is the National Teacher Examinations (NTE), which is now required by more than 200 school districts and eight states. The NTE is designed to measure academic preparation in four domains: communication skills, general education, professional education, and subject field specialization.

There are no validation data available for the most recent version of the recently revamped NTE; the previous version, however, had been in use for some 40 years without proven predictive validity for identifying good teachers. The test's publishers recommend that it be used only as one of many criteria for initial selection of teachers, and that it not be used in any way with inservice teachers. In our opinion, it may have value only as an indicator of general literacy; vigilance against over-interpreting the scores is essential.

The Dallas Independent School District has found that the Wesman Personnel Classification Test, a 28-minute measure of verbal and quantitative ability, is at least as good a predictor of rated teaching effectiveness as the NTE. Wesman Verbal scores were also related to achievement gains among secondary students.

Other factors to be considered in planning a possible testing requirement are legal issues, minorities' scores, and state requirements.

- In general, the key issues in court challenges to the NTE (and this probably applies to any test) appear to be (1) intentional racial discrimination, and (2) the content validity of the test. Local validation studies would be required before using any test.

- Minorities score substantially lower than Anglos on both the NTE and the Wesman, as on most standardized tests. This could lead to conflict with the District's affirmative action committment.

- The State of Texas will require a test for teacher certification beginning in 1986. The State is just beginning to require a test (the Pre-Professional Skills Test, PPST) for college students entering teacher certification programs.

We conclude that there is probably little for AISD to gain by testing teachers, considering the State's 1986 requirement. If testing is to be done, a brief test of verbal and quantitative skills such as the Wesman may be more appropriate to use as an indicator of basic literacy.

Psychological testing and the Teacher Perceiver, a structured interview, have also been considered as possible components of the teacher selection process. (The latter is already used in AISD.) It is concluded that psychological testing probably has no potential usefulness for the District, while the Teacher Perceiver requires additional local validation.

NO PANACEAS: A BRIEF DISCUSSION OF TEACHER SELECTION INSTRUMENTS

I. The Problem: Teacher Competence

The widespread perceptions that public schools are doing a poor job and that many teachers are themselves deficient in basic academic skills have caused many states and localities to turn to competency testing to evaluate their teachers and/or applicants. Currently, 30 states require or have set a date to require applicants for teacher certification to be tested for competency either in the basic skills, subject matter knowledge, pedagogical knowledge, or some combination of these (Euchner 1984).

A need does indeed appear to exist. Consider:

- In 1978, the Dallas Independent School District gave the Wesman Personnel Classification Test of basic skills to 535 first-year teachers and to a volunteer group of juniors and seniors from a private high school in the area. Not only did the students outperform the teachers, but more than half the teachers fell below the score considered acceptable by the district (R. Mitchell 1978).

- Among 12 groups of college majors listed in a report in the Journal of Teacher Education (Weaver 1981), education majors nationwide had the lowest SAT Verbal and Math scores.

- A report from Educational Testing Service (Benderson 1982) showed that when high school seniors and college students were tested on their knowledge of international affairs, education majors scored lower than any other group.

- In New Mexico, it was reported that none of the state's 136 bilingual teachers could pass a fourth-grade level Spanish test (Crewdson 1979).

II. One Response: Competency Tests

The State of Texas has responded to the problem by requiring that prospective teachers pass the Pre-Professional Skills Tests (PPST) before they are admitted to an education major, and that beginning in 1986 they must pass an exit test, as yet unspecified, before they are actually certified as teachers.

The test battery in widest use for certification purposes nationwide is the National Teacher Examinations (NTE), published by Educational Testing Service and required by more than 200 school districts (and eight states). The NTE measures academic preparation in four major domains: communication skills, general education, professional education, and subject-field specialization. The first three of these are measured by the Core Battery, the last by the 28 Specialty Area Tests.

The Core Battery consists of three components:

(1) The Test of Communication Skills (listening comprehension, reading comprehension, writing);

(2) The Test of General Knowledge (literature, fine arts, mathematics, science, and social studies);

(3) The Test of Professional Knowledge (processes and context of teaching).

The Speciality Area Tests measure knowledge of the specific subjects in which the candidates have concentrated and which they intend to teach.

Validity of the NTE. The NTE has recently been revamped; no validation data are available for the revised test. The previous version, however, had been in use for some 40 years without showing much ability to identify good teachers (which, we should stress, ETS has never claimed it could do in either its former or present version).

A research review published by ETS and cited by the Mental Measurements Yearbook (Buros 1978) found a median correlation of .11 for seven studies correlating a composite NTE score and ratings given by principals and supervisors during teachers' first year, and .10 during the third year. Another review (Shields and Daniele 1982) found that NTE scores correlated -.01 to .04 with student teaching grades. Although Piper and O'Sullivan (1981) reported a moderate correlation between NTE scores of preservice teachers and observational ratings, it is difficult to assess the worth of this study because the reliability and validity of the criterion measure used are unknown. In sum, we concur with the reviewer who concluded:

> ...There can be no shadow of a doubt that the NTE [scores] are grossly misused if they are used in any way to predict classroom teaching effectiveness as conventionally measured... The grave danger is that this type of quantitative information is so handy, seemingly concrete, and beguiling that it will receive more emphasis than its validity deserves, and abuses damaging to careers and human beings will result (J. Mitchell 1978, p. 518. Emphasis in original).

Valid uses of the NTE. ETS now reports scores for the tests of Communications Skills, General Knowledge, and Professional Knowledge separately, and the Weighted Common Examination Total (WCET) is no longer reported. A study of the former version of the NTE, however, found that WCET scores correlated .77 with GRE Verbal scores (Johnson 1963) which suggests that the NTE and tests of verbal ability involve similar aptitudes. The Dallas Independent School District (Webster 1980) confirmed this when they obtained a correlation of .81 between the WCET and the Verbal section of the Wesman Personnel Classification Test. The NTE, then, is probably a valid test of general literacy.

ETS recommends that NTE tests be used as part of a process for selecting teachers for initial employment only when the district

- Uses multiple criteria, including interviews, references, classroom observation, transcripts, and written applications;
- Publicly promulgates selection criteria;
- Carries out studies to establish the content validity of the tests for teachers in the local district.

ETS strongly advises against giving the test to inservice teachers and states that

> NTE tests should not be used by school districts, directly or indirectly, to determine the compensation, retention, termination, advancement, pay supplements, or change in provisional employment status of teachers once they are employed.
>
> (NTE Policy Council 1983)

We believe that these guidelines are sound - NTE scores should be used, if at all, only as one part of the initial selection process; and they should not be considered a predictor of teaching ability, but only of general literacy.

(Houston Independent School District, as part of the Second Mile Plan, planned to require all teachers to achieve a certain score on the Pre-Professional Skills Tests (an ETS test battery closely related to the NTE) or be frozen on the salary schedule. ETS informed HISD that they would no longer make the tests available if HISD intended to use them for that purpose; HISD has responded by developing its own test.)

III. Dallas' Studies

In the late 1970's, the Dallas Independent School District undertook a program of research as part of an attempt to improve their teacher selection (Webster 1980). In 1977, all first-year teachers in DISD participated in a study comparing the NTE common score, the Wesman Personnel Classification Test (a 28-minute test of verbal and quantitative ability), and a formally scored interview as predictors of effective teaching.

The criterion variables were principals' ratings, residual mean classroom gain scores on the ITBS (controlling for pretest score), and behavioral ratings. The behavior ratings used depended on the teacher's grade level. For secondary teachers, the Class Average Residualized Composite Score (CARCS) was calculated for each teacher, by obtaining students' ratings on a reliable 37-item measure of teacher behavior based on Gagne and Briggs' (1974) theory of pedagogy and controlling for the effects of course subject matter, expected grade, halo effects, and student/teacher ethnic differential. They were also assessed by trained observers. The elementary teachers were measured by the observers only.

Important results from this study were:

- The Wesman Verbal score correlated .81 with the NTE common score.
- Neither the NTE, the Wesman, interviews, nor student ratings (CARCS) correlated with principals' evaluations.
- Among secondary teachers, both NTE score and Wesman Verbal scores correlated .47 with student ratings (CARCS). The Wesman is also correlated with observers' ratings at both elementary and secondary levels.
- Interview scores had very low correlations with the Wesman, the NTE, and student ratings.
- Wesman Verbal scores were a moderate predictor of achievement test gains at the middle and secondary school level but not at the elementary level. The failure to predict elementary ITBS scores may be caused by insufficient variance in ITBS scores at lower grade levels.

In sum, the Wesman is at least as good a predictor of behavioral ratings and test score gains as the NTE, with which it is highly correlated; but while the NTE is administered by ETS, is expensive for the examinee, takes several hours to complete, and takes several weeks for the scores to be reported, the Wesman takes 28 minutes and can be administered in the personnel office. (DISD now uses its own test, similar to the Wesman, for security reasons.)

IV. Other Considerations

Legality of testing. This is an area that should be studied very carefully by legal counsel for the District. In 1978 the United States Supreme Court summarily affirmed a federal district court's ruling that the State of South Carolina's use of the NTE to certify teachers was constitutional and that local districts' use of the tests for salary purposes was, though opposed by ETS, lawful under Title VII of the Civil Rights Act of 1964 (NTE Policy Council 1983). The fact that the federal court's judgement was summarily affirmed, without benefit of briefs and oral arguments on the merits of the decision, means that it has full precedential weight only in the federal judicial circuit in which the case arose.

In general, the key issues in court challenges to the NTE appear to be (1) intentional racial discrimination and (2) the test's content validity. ETS emphasizes that this validity must be established locally, because it may differ across districts. The courts have also ruled against using test scores as the sole criterion of hiring.

Minorities' scores. While the NTE itself has been judged by the courts to be nondiscriminatory, it is a fact that minorities score substantially lower than Anglos; the same is true of the Wesman and similar tests. Adoption of test scores as a criterion of hiring, even if it is

only one of many, may conflict with the District's affirmative action commitment. DISD has attempted to overcome this by aggressive nationwide recruitment of minorities (R. Mitchell 1978).

State requirements. The state of Texas will require, beginning in 1986, all prospective teachers to pass some kind of certification test (as yet unspecified) before being licensed. It may be unnecessary for AISD to do the same. The PPST is now required for college students entering a teacher certification program.

V. Psychological Testing of Teachers

The long search for psychological instruments which could differentiate good teachers from poor teachers has not been a fruitful one. This was a very popular and active research area at one time. The first Handbook of research on teaching devoted a long chapter to "The Teacher's Personality and Characteristics" (Getzels and Jackson 1963); the authors confined themselves to studies published since 1950 and still had to sort through more than 800. The second version of the Handbook (Travers 1973), however, barely mentioned the topic, and an ERIC search covering the years 1980-83 turned up very few relevant studies.

One can easily see why interest in research attempting to relate personality characteristics to teaching effectiveness has waned - it wasn't getting anywhere. There are plenty of statistically significant findings in the literature, but there appears to be no coherent pattern to them, and very, very few have been replicated or cross-validated.

Even the studies that have shown associations between one characteristic or another and good teaching do not inspire confidence that a measure of this characteritic can justifiably be used as part of an actual selection process. There are several reasons for this. First, as mentioned above, most findings have not been cross validated on a separate sample, a process which is always necessary to establish the validity of a selection instrument. Second, the criterion variable "teaching ability" is measured in different ways from study to study and has itself proven to be a very difficult variable to measure validly. Most studies have used supervisor ratings, which seldom have documented validity.

A third problem lies in the strength of the relationship between any single characteristic and teaching ability. If we obtain supervisor ratings for a group of teachers and separate them into a "good" group and a "poor" group (the usual method in these sorts of studies), then we administer an instrument measuring Characteristic A and find a difference in group means, we can say that the presence of Characteristic A is predictive (in a statistical sense) of teaching ability. There will invariably be an overlap in scores, so that some poor teachers score higher than some good teachers. If the overlap is small, the instrument could have some value as a selection device, but our review of the literature uncovered no such instruments. The relationships found, even when statistically "significant," have not been large enough nor consistent enough to be of

practical use. In general, the best statement one could make is that the qualities of a good teacher are probably those of any mentally healthy person.

This last statement suggests another possible goal of administering personality assessment instruments to teacher candidates: screening out the seriously disturbed. While there is no test that alone can do this, there are tests which could be used to indicate which candidates might warrant further professional psychological investigation. The difficulty here is that the rate of serious disturbance in a population of teacher candidates is so low that the efficiency of a screening instrument is impaired.

Cronbach (1970, p.538-539) gives an example of this problem, using for illustration the Minnesota Multiphasic Personality Inventory (MMPI), the most popular instrument used for initial assessment by clinicians. The mean score on the Depression scale of the MMPI is 50. If a psychologist classifies anyone scoring above 70 as depressed, he or she will be correct 80% of the time -- if depressed patients constitute half of the patients he or she sees. If depressives are only 20% of the population, the cutoff score must be 83 to get the same "hit" rate, but such a high cutoff would leave more than half of the depressives undetected. Among teaching candidates, the rate of serious mental illness is undoubtedly very low -- surely less than 1% -- so in order not to miss anybody with real problems one must tolerate an extremely large number of false alarms. Of course, separating the false alarms from the hits would require costly professional evaluation. So the question here is really one of practicality: is it worth the time and expense required to screen out the small number of seriously disturbed people who have nevertheless become certified teachers and applied for a job in the District, and who wouldn't be screened out on any other grounds?

VI. The Teacher Perceiver Interview

The Teacher Perceiver Interview is a selection process developed by Selection Research Incorporated of Lincoln, Nebraska, involving a structured interview with questions revolving around 12 "Teacher Themes." There are three versions, having 60, 24, and 12 items, respectively. The stated purpose of the Teacher Perceiver is to "identify the very best teaching talent."

Miller, Clements, and Gardner (Note 1) assessed the documentation of the Teacher Perceiver Interviews provided by SRI; discussed the implementation of the Teacher Perceiver system in Chicago, Houston, and Austin; and interviewed practitioners and administrators in AISD, who compared the Teacher Perceiver Interview with more traditional methods of teacher selection.

Miller et al. are sharply critical of the documented validity of the Teacher Perceiver. This criticism rests on several grounds. First, no validation study has ever appeared in a refereed journal. (In fact one "landmark" study cited by SRI could not be found at all.) Most of the

studies cited by SRI consist of doctoral dissertations done at the University of Nebraska and of unpublished field studies conducted under the auspices of specific school districts. Second, even for these studies the reported correlations with student or administrator rankings of the teachers do not compare favorably with correlations obtained between industrial interview procedures and job performance measures. Third, the criterion measures may themselves be of questionable validity.

The discussion of the Teacher Perceiver's implementation in Chicago includes several quotations from a radio documentary broadcast on station WBBM in Chicago in December, 1978. Professor Herbert Walberg of the University of Illinois said,

> It would be a real miracle in education to have an instrument like this that would have a great deal of predictive validity....16,000 educational researchers in the United States have not been able to produce something like this....since the turn of the century.

Maurice Esch, Dean of the College of Education at the University of Illinois:

> ...it lacks adequate predictive validity....these are unproven claims....

Dr. Bernard McKenna, National Education Association:

> What they are asking is people to express themselves about their very deep convictions and very complex psychological things on almost spur of the moment answers. [This results in] giving high scores to some people who are very glib and quick and talk well off the top of their head.

Miller et al. (Note 1) interviewed four AISD staff members concerning their opinions about the Teacher Perceiver: an elementary principal, a junior high principal, the director of staff personnel, and the coordinator of secondary mathematics. Both principals were "quite enthusiastic" about the Teacher Perceiver. Both used the Perceiver in conjunction with such objective indices as grade point average, and both believed it superior to the previous AISD interview procedure.

The director of staff personnel was also pleased with the Teacher Perceiver, but the coordinator of secondary mathematics had a very different opinion. He found the training "worthless," the ratings of the "exemplary" taped interviews very subjective, and the trainers rigid.

Miller et al. (Note 1) conclude that the empirical bases for claims of the validity of the Teacher Perceiver are weak and that there is no evidence that the system is predictive of good teaching.

Carsrud, Young, Krus, Glick, Gronlie, and Culver (Note 2) have recently reported the results of a validation study of the Teacher Perceiver

conducted within AISD. They studied 27 special education teachers who had been interviewed with the Teacher Perceiver before employment and who had subsequently received performance evaluations, and found that only two of the 12 Theme scores (Empathy and Individual Perception) were predictive of success. The multiple R (an indicator of the strength of the relationship between the predictors and the criterion) for these two variables was high, however, providing some encouragement. Carsrud et al. do not report whether the criterion ratings and the interview ratings were made by different raters; if so, the results are stronger. Further validation is needed in any case, however.

On balance, it is difficult to make a conclusion about the Teacher Perceiver's validity. Until more evidence is gathered in AISD, it is probably best to follow Miller et al.'s (Note 1) recommendation and not use the instrument on any but an experimental basis.

VII. Conclusion

It may seem that this report has been very negative concerning various methods of selecting competent teachers. We should point out that in a sense the dice are loaded against finding any selection process to be effective, because in most studies the people who fail the process are no longer evaluated -- they do not get hired. This is like trying to judge the relationship between height and basketball ability by correlating height with success among professional players. There is probably no correlation at that level, but all the players had to be tall enough to become professionals in the first place, so the true relationship is masked. A "restricted range" on a variable usually reduces statistical correlations.

Our real conclusion is not that current methods of teacher selection are inadequate, but rather than no <u>single</u> method is a panacea. All sources of information -- interviews, grades, test scores of verbal ability, letters of recommendation, student teaching evaluations, and written applications -- have value. No one source should be relied upon to the exclusion of others.

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